3). Applicant respectfully submits you allow the following claims:

Claim 1-12, Claim 16, 17-18 and 20.

Reply and explanation of the differences to the Official Action summary

The main difference of present invention and prior arts of Lempel et al. US 5796434 and Wee et al. US 6697061: This invention is in video "DeCompression" mainly for reducing the computing times of "VLD" + "Inverse DCT", while, the two prior arts of Lempel et al. US 5796434 and Wee et al. US 6697061 both are in "Video Compression" and focusing on reducing computing times of "Motion Estimation and/or DCT" as listed in the table below

	Sung et al. **Present invention**	**Lempel et al.** **US 5796434**	**Wee et al.** **US 6697061**
Main features / Key points	Reducing computing times of **"VLD" + "Inverse DCT"**	Reducing computing times of "Motion Estimation" And "DCT"	Reducing computing times of "Motion Estimation" for "Video Editing"

"Claim 1" recites a method for **decoding a video stream**:

1). Decompressing the video stream (VLD + inverse DCT + DeQuantization) and keeping the DCT bit stream into a temporary buffer for comparing to the

new coming Block stream.

2). Incoming video stream equals to one of previously saved "Block" (DCT coefficient with VLC coded form) stream, then, the decompressed pixel values (differential values of a block pixels) will be used to represent the coming block.

We directly compare the video stream block by block to previous stream to identify the block stream which equals to previous block needs no decompression procedure including ("VLD", "inverse DCT" and "DeQuantization").

In contrast, the cited art of Lempel et al. US 5796434. as cited in column 15, Lines 20-24) performs "DCT transform ...." does not relate to this invention of inverse DCT and VLD. And in Fig. 5, elements 106B, 250, 126A and 118A are MPEG international standard video compression procedure. Which indeed teaches DCT and inverse DCT. But, the inverse DCT is for Reconstructing the compressed image as "Referencing Frame" for future Compression used which does not teach this invention of "decoding video stream" and does not teach VLD for decoding.

Applicant believes Claim 1 in the present invention needs to make clearer and

needs a minor change to avoid ambiguity.

Therefore, the Applicant respectfully submits you allow Claim 1, with the following updated Claim:

Claim 1: A method for decoding a video stream, comprising:

applying the variable length decoding scheme to decode the video bit stream and block by block recovering the DCT coefficients and dequantizing the coefficient by multiplying the quantization table and inverse transforming the DCT coefficients to matrix of pixel values;

VLD decoding video stream and maintaining a DCT coefficient table in a storage medium, wherein the DCT coefficient bit stream table includes pairs composed of DCT coefficient bit streams and bock pixel data, the block pixel data providing inverse-DCT information of the corresponding DCT coefficient bit stream;

looking up the DCT bit stream table when receiving a VLD decoded DCT input stream to find whether the new DCT coefficient matrix matches a DCT coefficient matrix; and

utilizing the block pixel data corresponding to the matched DCT coefficient bit stream to generate inverse-DCT data of the DCT input bit stream if the DCT bit stream table includes the matched DCT coefficient bit stream.

Therefore, the Applicant respectfully submits you allow Claim 1.

Due to the close correlation and dependency between Claim 1 and the following Claim 2-12, Applicant respectfully submits you allow Claim 2-12.

Claim 13-14 and 15: Even not quite the same to the quoted US patents (for ex. Sudharsanan et al. US 6654503), Applicant agrees that some degree of similarity.

Therefore, we would withdraw Claim 13-15.

Claim 16 recites an apparatus of this invention of efficient video bit stream decoding including three units: one to store the coming video stream and the decompressed previous stream of at least one block of pixels, another unit compares the new video stream to one of the previously decoded streams, and a selector choose the matched block of pixels to represent the new block. In contrast, Wee et al. US 6697061 teaches mainly the video editing in saving times of motion estimation and does not teach the video stream decoding at all as described in column 3, line 28-38 (especially it focuses on line 34-38 of "Video Editing" and distributing). Column 4 line 31-36 teaches only saving of searching times

in motion estimation, not video stream decoding as this invention of video decompression.

Applicant believes Claim 16 in the present invention needs to make clearer and needs a minor change to avoid ambiguity. Therefore, applicant respectfully submits you allow Claim 16, with the following updated Claim:

Claim 16: An apparatus for decoding a video stream, comprising:

a bit stream decoding unit including a VLD, variable length deciding and reconstructing the video bit stream to DCT matrix and a DeQuantization unit multiplying the DCT matrix to inverse transforming and recovering the block of pixel matrix;

a storage device for storing compressed video data stream and corresponding decompressed pixel data of at least one previous block ;

a device comparing a coming compressed stream to at least one previously saved stream; and

a device of selecting one of previously saved decoded blocks of pixel matrix to represent a target block if a target block is identical to one of the previously saved blocks.

Therefore, the Applicant respectfully submits you allow Claim 16.

Summary: After minor change of Claim 1, and Claim 16 and withdrawing Claim 13-15, 19, 21 please accept the corrected Claims, Claim 1-16:

1. A method for decoding a video stream, comprising:

applying the variable length decoding scheme to decode the video bit stream and block by block recovering the DCT coefficients and dequantizing the coefficient by multiplying the quantization table and inverse transforming the DCT coefficients to matrix of pixel values;

VLD decoding video stream and maintaining a DCT coefficient table in a storage medium, wherein the DCT coefficient bit stream table includes pairs composed of DCT coefficient bit streams and bock pixel data, the block pixel data providing inverse-DCT information of the corresponding DCT coefficient bit stream;

looking up the DCT bit stream table when receiving a VLD decoded DCT input stream to find whether the new DCT coefficient matrix matches a DCT coefficient matrix; and

utilizing the block pixel data corresponding to the matched DCT coefficient bit stream to generate inverse-DCT data of the DCT input bit stream if the DCT bit stream table includes the matched DCT coefficient bit stream.

2. The method of claim 1, further comprising the steps of decoding the

DCT bit stream and saving the decoded result into the DCT bit stream table if the DCT input stream fails to matched any DCT reference bit stream in the DCT bit stream table.

3. The method of claim 2, further comprising the step of compressing the decoded result saved in the DCT bit stream.

4. The method of claim 1, wherein the DCT input bit stream and the DCT reference bit stream are matched if the DCT input bit stream and the DCT reference bit stream are identical.

5. The method of claim 1, wherein the DCT input bit stream and the DCT reference bit stream are matched if a difference of the DCT input bit stream and the DCT reference bit stream is lower then a predetermined threshold.

6. The method of claim 1, further comprising a step of representing a target block with a decompressed block pixels' within neighboring blocks if a compressed stream of the previously saved block streams is identical to a target block stream.

7. The method of claim 1, wherein a threshold value is compared to a weighted difference of compressed DCT coefficients of at least one previously saved block and a target block for determining the similarity.

8. The method of claim 7, wherein a weighted difference between at least one previously saved block stream and a target block stream is applied to determine whether a lossy decoding is applied in decompressing the video bit stream.

9. The method of claim 8, wherein one of previously saved decoded blocks is selected to represent a target block if a weighted sum of DCT coefficient difference between a target block and the closest block saved in the storage is less than a predetermined threshold;

10. The method of claim 1, wherein a compressed bit stream and the corresponding decoded pixels of farer distance from a target block can be overwritten when the storage device of storing compressed bit stream and decoded pixel is short of space.

11. The method of claim 1, wherein a decompressed bit stream is compressed before being stored to a buffer for future representing a new block stream.

12. The method of claim 1, wherein a decompressed bit stream is compressed through a lossless compression mechanism before being stored to a buffer and is decompressed for future representing a new block stream.

13 An apparatus for decoding a video stream, comprising:

a bit stream decoding unit including a VLD, variable length deciding and reconstructing the video bit stream to DCT matrix and a DeQuantization unit multiplying the DCT matrix to inverse transforming and recovering the block of pixel matrix;

a storage device for storing compressed video data stream and corresponding decompressed pixel data of at least one previous block ;

a device of comparing a coming compressed stream to at least one previously saved stream; and

a device of selecting one of previously saved decoded blocks of pixel matrix to represent a target block if a target block is identical to one of the previously saved blocks.

14. The apparatus of claim 13, wherein an output of a comparator is used to select the decoded pixels to represent the target block pixels.

15. The apparatus of claim 13, wherein decoded block pixels represent the target block pixels by copying the decoded block pixels. 20.

16. The apparatus of claim 13, wherein in decompressing an I-type frame and JPEG still pictures, one of previously decoded and saved blocks is selected to represent the target block without going through a motion compensation device.

In summary, Applicant respectfully submits that the application is in condition for allowance, for which early action is requested.

Respectfully submitted,

By: _____ Date: 28th , June, 2007